Abstract

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Title of the diploma thesis: Development of HPLC method for analysis of food supplements based on berberine extract

In this diploma thesis, an HPLC method for the determination of berberine and its related isoquinoline alkaloids aromoline, berbamine, magnoflorine, tetrahydropalmatine, jatrorrhizine, palmatine, tetrahydroberberine and oxyberberine was developed and validated. The method was subsequently applied to the determination of the relevant analytes in the food supplements Allnature Berberin 98% extract, Ostrovit Berberin, Swanson Berberin and GreenFood Berberine.

An Ascentis® Express AQ-C18 (150 x 4.6 mm, particle size 2.7 µm) analytical column was used for chromatography analysis, using an acetonitrile/0.085% aqueous solution of phosphoric acid mobile phase. The flow rate of mobile phase was 1 ml/min with a sample injection volume of 5 µl and a column temperature of 30 °C. The gradient elution was used for analysis and detection was performed with a DAD detector at wavelengths of 225 and 345 nm.

Key words: HPLC, berberine, aromoline, magnoflorine, berbamine, palmatine, tetrahydropalmatine, jatrorrhizine, tetrahydroberberine, oxyberberine, food supplement